



DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

[Docket No. FMCSA-2021-0186]

Parts and Accessories Necessary for Safe Operation; Rosco Vision, Inc.; Application for an Exemption

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Notice of final disposition; grant of exemption.

SUMMARY: The Federal Motor Carrier Safety Administration (FMCSA) announces its decision to grant a limited 5-year exemption to Rosco Vision, Inc. (Rosco) to allow motor carriers to operate commercial motor vehicles (CMVs) with the company's CV (Commercial Vehicle) Digital Camera Monitor System (CMS) (CV Digital CMS) installed as an alternative to the two rear-vision mirrors required by the Federal Motor Carrier Safety Regulations (FMCSRs). The Agency has determined that granting the exemption would likely achieve a level of safety equivalent to or greater than the level of safety provided by the regulation.

DATES: This exemption is applicable December 4, 2022 and ending December 4, 2027.

FOR FURTHER INFORMATION CONTACT: José R. Cestero, Vehicle and Roadside Operations Division, Office of Carrier, Driver, and Vehicle Safety, MC-PSV, Federal Motor Carrier Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590-0001; (202) 366-5541; jose.cestero@dot.gov.

Docket: For access to the docket to read background documents or comments submitted in response to the notice requesting public comments on the exemption application, go to www.regulations.gov at any time or visit Room W12-140 on the ground level of the West Building, 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., ET, Monday through Friday, except Federal holidays. To be

sure someone is there to help you, please call (202) 366-9317 or (202) 366-9826 before visiting Docket Operations. The on-line Federal document management system is available 24 hours each day, 365 days each year. The docket number is listed at the beginning of this notice.

I. BACKGROUND

FMCSA has authority under 49 U.S.C. 31136(e) and 31315(b) to grant exemptions from certain parts of the FMCSRs. FMCSA must publish a notice of each exemption request in the Federal Register (49 CFR 381.315(a)). The Agency must provide the public an opportunity to inspect the information relevant to the application, including any safety analyses that have been conducted. The Agency must also provide an opportunity for public comment on the request.

The Agency reviews safety analyses and public comments submitted and determines whether granting the exemption would likely achieve a level of safety equivalent to, or greater than, the level that would be achieved by the current regulation (49 CFR 381.305). The decision of the Agency must be published in the Federal Register (49 CFR 381.315(b)) with the reasons for denying or granting the application and, if granted, the name of the person or class of persons receiving the exemption, and the regulatory provision from which the exemption is granted. The notice must also specify the effective period (up to 5 years) and explain the terms and conditions of the exemption. The exemption may be renewed (49 CFR 381.300(b)).

II. ROSCO'S APPLICATION FOR EXEMPTION

Rosco applied for an exemption from 49 CFR 393.80(a) to allow its CV Digital CMS to be installed as an alternative to the two rear-vision mirrors required by the Federal Motor Carrier Safety Regulations (FMCSRs) on CMVs. A copy of the application is included in the docket referenced at the beginning of this notice.

Section 393.80(a) of the FMCSRs requires that each bus, truck, and truck-tractor be equipped with two rear-vision mirrors, one at each side. The mirrors must be positioned to reflect to the driver a view of the highway to the rear and the area along both sides of the CMV. Section 393.80(a) cross-references the National Highway Traffic Safety Administration's (NHTSA) standards for mirrors on motor vehicles (49 CFR 571.111, Federal Motor Vehicle Safety Standard [FMVSS] No. 111, "Rear Visibility"). Paragraph S7.1 of FMVSS No. 111 provides requirements for mirrors on multipurpose passenger vehicles and trucks with a gross vehicle weight rating (GVWR) greater than 4,536 kg and less than 11,340 kg and each bus, other than a school bus, with a GVWR of more than 4,536 kg. Paragraph S8.1 provides requirements for mirrors on multipurpose passenger vehicles and trucks with a GVWR of 11,340 kg or more.

The CV Digital CMS consists of three cameras, each with a specific field of view (FOV), firmly mounted to the top of the vehicle's external A-pillar location, enclosed in an aerodynamic package that provides environmental protection for the cameras. Each camera presents a clear image to the driver by means of an internal monitor firmly mounted to the left and right A-pillar of the CMV, i.e., the structural member between the windshield and door of the cab. The installation of the monitors on the A-pillars creates no additional visual obstruction, while eliminating the substantial blind spots created by conventional mirrors. Rosco states that its CV Digital CMS meets and/or exceeds the visibility requirements provided in FMVSS No. 111 based on the following factors:

- The CMS provides the driver with an enhanced FOV when compared to conventional mirrors.
- The interior viewing monitors feature an ambient light sensor which will allow the system to dynamically adjust the screen brightness to the optimal level based on the amount of ambient light. This prevents driver eye strain when viewing the monitors at night.

- The camera assemblies have an automatically activated heating system to ensure there is no buildup of ice or moisture on the lens that could potentially obstruct the cameras' function.
- The internal monitors are located such that the system's ergonomics reduce upper-body range of motion, thereby reducing driver fatigue.

Rosco believes that mounting the system as described would maintain a level of safety that is equivalent to, or greater than, the level of safety achieved without the exemption.

III. SUMMARY OF COMMENTS

FMCSA published a notice of the application in the Federal Register on December 21, 2021, requesting public comment (86 FR 72305). The Agency received comments from four individuals who generally opposed granting the application and one comment in support of the application subject to conditions.

One commenter who opposed the exemption generally discourages the use of cameras to replace mirrors. Three other commenters suggested that the cameras be used in conjunction with standard rearview mirrors, rather than replacing them, due to concerns that an unsafe operating condition would exist in the event of a camera failure. And one commentor suggested that any CMS installed in the United States comply with the United Nations Economic Commission for Europe (UNECE) R46 rev 06 – *Devices for Indirect Vision* (UNECE R46).¹

Although the Agency received 4 comments opposing this exemption, FMCSA has received numerous positive comments in support of other, similar camera-based mirror system exemptions, such as in Stoneridge, Inc. "MirrorEye Camera Monitor System" (84 FR 5557, February 21, 2019), Vision Systems North America "SmartVision System" (85 FR 2486, January 15, 2020), and Robert Bosch, LLC and Mekra Lang North America,

¹ See <https://unece.org/un-regulations-addenda-1958-agreement>.

LLC (Bosch) “Digital Mirror System” (85 FR 58106, September 17, 2020). Seventeen motor carriers, associations and individuals supported the Stoneridge application specifically noting the following benefits: (1) superior total field-of-view around a CMV, including reduction/elimination of blind spots (2) increased visibility when driving at night and during inclement weather, (3) enhanced vehicle maneuverability in backing, turning, and lane changes through use of trailer scanning, (4) and reduced driver fatigue.

Vision Systems North America’s application was supported by 5 motor carriers, associations, and individuals. These commenters specifically noted the following benefits of the camera-based mirror system proposed; (1) improved field-of-view around a CMV, including reduction/elimination glare and blind spots (2) increased visibility when driving at night and during inclement weather, and (3) reduced driver fatigue.

The American Bus Association (ABA) commented in support of the Bosch Digital Mirror System. The ABA noted that the Bosch system provided the following visibility benefits; (1) anti-glare, (2) improved visibility at night and during adverse weather conditions, and (3) elimination of blind spots by providing a broader field of vision around the vehicle.

In addition to the positive comments received relating to other CMS systems, the Agency has not received any reports of accidents or other safety concerns relating to the previously granted CMS exemption applications.

IV. FMCSA Decision Granting Exemption

FMCSA evaluated Rosco’s application for exemption and the comments received. For the reasons discussed below, FMCSA is granting the exemption to allow motor carriers to install and operate CMVs with the CV Digital CMS as an alternative to the two rear-vision mirrors required by the FMCSRs. FMCSA believes that the CV Digital CMS is likely to achieve a level of safety equivalent to or greater than the level of safety provided by the regulation.

A. Equivalent Level of Safety Analysis

FMCSA section 393.80 cross references FMVSS No. 111 which requires CMVs with a GVWR of 11,340 kg (25,000 pounds) or more to be equipped with a rearview mirror size of unit magnification of no less than 323 cm² (50 in²) on each side of the vehicle. In its comments to a 2019 National Highway Traffic Safety Administration Advance Notice of Proposed Rulemaking on rear visibility, the Engine Manufacturers Association² (EMA) noted that CMV manufacturers are equipping CMVs with mirrors that are more than twice the minimum size required for each side of the vehicle, as well as adding convex mirrors to provide the driver a still greater FOV. The manufacturers install these larger, less aerodynamic mirrors to provide the driver the enhanced visibility that is crucial to the safe operation of a large truck. Similarly, CMS like Rosco's CV Digital CMS are capable of providing an enhanced FOV that exceeds FMVSS No. 111 and the current rear-vision mirrors installed on CMVs.

FMCSA notes that CMS systems are authorized for use in a number of European countries as a legal alternative to the traditional rear-vision mirrors under the requirements of United Nations Economic Commission for Europe (UNECE) R46 which specifies minimum safety, ergonomic, and performance requirements for CMS in place of mandatory inside and outside rearview mirrors for road vehicles. This regulation references ISO (International Organization for Standardization) standard 16505 Rev 2019 which addresses CMS definitions and required performance for use in road vehicles. The specifications for CMS systems in ISO 16505 exceed the FOV requirements in FMVSS No. 111. Rosco stated that although the CV Digital CMS is designed to meet UNECE

² Engine Manufacturers Association (EMA) comments to NHTSA ANPRM Federal Motor Vehicle Safety Standard No. 111, Rear Visibility (84 FR 54533, October 10, 2019), <https://www.regulations.gov/comment/NHTSA-2018-0021-0493>

R46, it has not yet applied for certification of its system in countries that require UNECE R46 certification because it does not intend to offer its devices for sale in those countries.

FMCSA has reviewed the Rosco CV Digital CMS submission and has determined that the Rosco system exceeds both the FOV required by FMVSS No. 111 and rear-vision mirrors currently installed by manufacturers.

FMCSA acknowledges the concerns of four individual commenters regarding potential system failure of the CV Digital CMS. FMCSA notes that the CV Digital CMS is designed with redundancy in the event of camera failure such that if one of the cameras within the camera assembly were to fail, the system automatically adjusts the view of the interior monitor for that side to a full screen view of the remaining working camera.

In the event of camera or monitor failure, the CMV would not be subject to an out-of-service order because it is not a critical inspection item under CVSA's out-of-service-criteria³ (OOSC), in the same way conventional mirrors are not out of service if cracked or damaged while in operation. Instead, the CMV would be subject to the requirements of 49 CFR 396.11 which would require a driver to complete a driver vehicle inspection report at the end of the workday and require the motor carrier to correct any identified safety defects before permitting or requiring a driver to operate the CMV again.

Additionally, under 49 CFR 392.7(a), CMV drivers must satisfy themselves that a vehicle is in safe condition before operating the vehicle. This obligation would include ensuring that both rear-vision mirrors (or in this case, all components of the CV Digital CMS including all external cameras and both internal monitors) are in good working order. CMVs are also subject to the periodic inspection requirements under 49 CFR 396.17 which would include an inspection of the CV Digital CMS. To further

³ The CVSA OOSC states that any motor vehicle which by reason of its mechanical condition or loading that would be likely to cause an accident or breakdown is considered "Out-of-Service." Violations, other than Out-of-Service conditions, detected during the inspection process will not preclude the completion of the current trip or dispatch. However, such violations must be corrected or repaired prior to redispach. See <https://www.cvsa.org/inspections/out-of-service-criteria/>.

ensure that the CV Digital CMS system is properly maintained, the terms and conditions of the exemption specify that motor carriers and drivers operating CMVs under this exemption must inspect the CV Digital CMS before operation of the CMV.

FMCSA believes that the CV Digital CMS is likely to achieve a level of safety equivalent to or greater than the level of safety than standard rear-view mirrors because it provides a greater FOV, it eliminates the blind spots on both sides of the vehicle, provides a monitor with low light sensitivity feature, and includes a camera heating system, all of which exceed the current requirements of 49 CFR 393.80. The FMCSRs impose several operational controls that will help ensure that the CV Digital CMS is functioning properly. Before driving a vehicle, a driver must be satisfied that the vehicle is in safe operating condition, and that any system failures reported have been corrected prior to vehicle re-dispatch. Additionally, the driver must complete a driver vehicle inspection report at the completion of the workday, noting any system defects or failures that occurred during operation of the vehicle.

B. Duration of Exemption

The Agency grants the exemption for a 5-year period, beginning December 4, 2022 and ending December 4, 2027 unless rescinded earlier by FMCSA. During the exemption period, motor carriers operating CMVs may install and utilize the Rosco CV Digital CMS in lieu of the two rear-vision mirrors required by section 393.80 of the FMCSRs.

C. Conditions of Exemption

1. This exemption is limited to the Rosco CV Digital CMS installed on CMVs and does not apply to any other camera-based mirror replacement system/technology.
2. Drivers operating CMVs under this exemption must inspect the CV Digital CMS each time before operating the CMV and ensure that it is in proper working order.
3. Drivers operating CMVs under this exemption must inspect the equipment at the

end of each day and note any defects in the equipment. The motor carrier must repair any defects noted by the driver before it operates the CMV.

4. The motor carrier must, in addition to existing periodic inspections required by 49 CFR 396.17, periodically inspect the CV Digital CMS.
5. Interested parties possessing information that would demonstrate that motor carriers operating CMVs utilizing the Rosco CV Digital CMS installed as an alternative to two rear-vision mirrors are not achieving the requisite statutory level of safety should immediately notify FMCSA by email at *MCPSV@DOT.GOV*. The Agency will evaluate any such information and, if safety is being compromised or if the continuation of the exemption is not consistent with 49 U.S.C. 31136(e) and 31315(b), will take immediate steps to revoke the exemption.

D. Preemption

In accordance with 49 U.S.C. 31313(d), as implemented by 49 CFR 381.600, during the period this exemption is in effect, no State shall enforce any law or regulation applicable to interstate commerce that conflicts with or is inconsistent with this exemption with respect to a person operating under the exemption. States may, but are not required to, adopt the same exemption with respect to operations in intrastate commerce.

E. Termination

FMCSA does not believe the motor carrier, the drivers, and CMVs covered by the exemption will experience any deterioration of their safety record. However, should this occur, FMCSA will take all steps necessary to protect the public interest, including revocation of the exemption without prior notice. The exemption will be rescinded if: (1) motor carriers and/or CMVs fail to comply with the terms and conditions of the exemption; (2) the exemption has resulted in a lower level of safety than maintained

before it was granted; or (3) continuation of the exemption would not be consistent with the goals and objectives of 49 U.S.C. 31136(e) or 31315(b).

Robin Hutcheson,

Administrator.

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